

INTEREST STATEMENT – RUSS S. SCHUMACHER

In my relatively short career as an atmospheric scientist, I have started to comprehend the work that scientists do that affects the general public, as well as the roadblocks that often hinder the efficient flow of information from scientists to one another and to the public. Taking part in discussions at conferences and participating in the AMS Summer Policy Colloquium in 2005 has further emphasized how important it is for our field to have informed decision makers with the best interests of both the science and the public in mind. Throughout my career, I plan to take an active role in the interactions between science (especially atmospheric science) and the greater community, and attending the Weather and Society Integrated Studies (WAS*IS) would provide a very firm grounding so that I can positively represent our field in these matters in the future.

My career goals at this point involve teaching and doing research at the university level after I complete my Ph.D., and I believe that participating in WAS*IS would help me in this regard. While many areas of our science are becoming more and more specialized, I think it will be increasingly important for the next generation of students to function in several disciplines, both scientific and otherwise. One unique experience I had as an undergraduate was the opportunity to take a course that explored the connections between science and the humanities. We examined the ways that writers and poets described scientific phenomena, and analyzed how scientists have tried to merge their findings into mainstream culture. The interactions that took place in this class showed why communicating with colleagues from diverse backgrounds is crucial to the advancement of our science and to the development of policies that serve society.

In my senior year at Valparaiso University, I ran for and was elected to the position of Student Body President. One of the main responsibilities of the student government at Valparaiso was to allocate funds to the approximately eighty student organizations on campus. As with federal, state, and local governments, each organization felt it deserved a certain amount of money, but there was never enough money in the budget to grant all of their requests. My colleagues or I often had to put the overall financial situation into perspective for these groups, experience that will help me be an informed advocate for appropriate scientific funding in the future. Another program that I took a leading role in as president was an initiative to benefit college students by removing the Indiana state sales tax on required textbooks. I worked with student leaders from other colleges in Indiana and presented our position in front of the state legislature. Unfortunately, our initiative was unsuccessful, but I learned many lessons about the processes and procedures of government and about communicating with the public from those experiences.

My current research is also in an area that is of great public concern. For my Masters degree, I studied extreme rainfall and flash floods, and I am continuing to focus on this area for my Ph.D. work. Flash floods cause more fatalities per year than any other convective-storm-related phenomenon, including tornadoes, hurricanes, and lightning, and though a great deal of work has been done to understand how flash-flood-producing weather systems work, the ability to forecast them adequately is still relatively low. Studying these storms also reveals the importance of an interdisciplinary outlook, since flash floods involve not only meteorology, but hydrology as well. The atmospheric science curriculum for graduate students does not typically include exposure to hydrology or engineering, but participation in a program like WAS*IS will probably provide me with more information on how to bridge this gap than even several courses would. The communication of flash flood warnings is another area of concern that requires input from people with different backgrounds. Since flash floods typically occur at night and often affect mountainous, relatively remote regions, communicating warnings to the people who live in those areas may require more than just running a “crawl” across the bottom of a TV screen. The opportunity to interact with social scientists and others at WAS*IS who may have insights into these problems will help me to better apply my research in ways that will benefit the general public.